



E. I. DU PONT DE NEMOURS & COMPANY

INCORPORATED

WILMINGTON, DELAWARE 19898

CHEMICALS, DYES AND PIGMENTS DEPARTMENT

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PERSONAL & CONFIDENTIAL

June 20, 1979

Complainant's
Exhibit No. 9

TO: MEETING ATTENDEES

FROM: P. G. GILBY

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FLUOROCHEMICALS IN BLOOD
5/22/79 MEETING SUMMARY

This letter is to summarize discussions and decisions reached in the subject meeting. It was agreed that:

<u>Item</u>	<u>Responsible for Coordination</u>
• The Chambers Works program to determine organic fluorine blood levels will be discontinued.	--
• Chambers Works employees will be informed of the results and discontinuance of the blood analysis program.	R. Richardson
• Followup will be done in the Wilmington control group employee whose blood sample was analyzed at 10.6 ppm organic fluorine.	Dr. J. C. Bonnett (additional blood sample has now been submitted for analysis)
• Medical records review study of Chambers Works exposed and control group will be updated December 1979. Update will be limited to tabulation of abnormal liver function tests.	R. Richardson to submit updated tabulation to P. G. Gilby for transmission to Dr. S. Pell.

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ItemResponsible for Coordination

- Blood analysis will be done for employees having potential for exposure to 3M's FC-143 at Washington Works. PP&R will submit samples week of 6/18/79 to G. E. Patterson, CD&P, Jackson Laboratory for analysis. R. M. Shepherd, PP&R
- Engineering control programs to reduce Telomer B Alcohol airborne contaminant levels during drumming, dedrumming and sampling will be defined and projects initiated. R. Richardson
- Acceptable airborne contaminant exposure limits recommendations will be requested for Telomer B Alcohol (Zonyl BA), Telomer A (Zonyl Tela) and ZFM. W. Darnell (Request to Haskell submitted 6/12/79)
- The need, if any, for (1) further toxicity testing of selected fluorochemicals, (2) MSDS revisions and (3) customer notifications will be determined. R. E. Read
- A meeting will be set up with 3M to review Du Pont toxicity, blood and health information. F. E. French will coordinate through B. McKusick, Haskell

Discussion Summary

- Haskell completed 10-day subacute feeding tests and issued reports for the eight fluorochemicals submitted by CD&P for testing. Of the materials tested, compound related non-reversible liver and testes effects were noted in rats fed 4,470 mg/kg/day Zonyl FSN and ~850 mg/kg/day Telomer (Zonyl) BA. Decreased sperm production was found in rats fed 5,000 mg/kg/day Zonyl Tela.
- The medical records of 221 active Chambers Works employees known to have potential for fluorochemical occupational exposure were reviewed and compared to a control group. The control group (221 employees) was randomly selected from Chambers Works employees and matched as to sex, age and A.S.D. No adverse health effects were noted. However, while the difference is not statistically significant ($P < 0.05$), the number of employees with abnormal liver function tests was notably higher in the exposed group (6 compared to 1). Continued surveillance is warranted.

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- Blood samples were taken from a representative sample (55) of the Chambers Works exposed group and analyzed for organic fluorine. Du Pont Wilmington employees (25) having no potential for fluorochemical occupational exposure were used as the control group to establish base line levels. The mean value for Chambers Works employees was slightly higher than the control group (0.15 versus 0.094 ppm organic fluorine), but all values are considered to be normal (≤ 1 ppm) except one 10.6 ppm value found in the Wilmington control group. A second blood sample from this individual will be taken and analyzed. Additional blood analysis of Chambers Works employees is not warranted in view of the low values found.
- An industrial hygiene survey of selected Chambers Works fluorochemical manufacturing and use facilities was carried out. Fluorochemical exposure potential was found to be low in the use facilities. Airborne contaminant levels in the manufacturing facilities were normally 45 mg/m^3 (0.26 ppm), 8 hr. TWA. However, levels up to 40 mg/m^3 (2.1 ppm), 8 hr. TWA were measured and additional monitoring is being done to better define exposure sources. Most probable exposure sources are drumming, dedrumming and sampling operations (facilities are not now enclosed and have no local exhaust ventilation.) Engineering control programs to reduce airborne contaminants from these operations are being developed and projects will be initiated to improve these facilities.
- 3M's FC-123 fluorosurfactant is used at Spruance (TF) and Washington Works (PP&R). PP&R will submit employee blood samples for analysis. Textile Fibers have not yet reached a decision on whether or not blood analysis is warranted for their operations.

For additional information, see attached meeting charts.

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Att.

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Meeting Attendees:

J. C. Breckenridge
F. E. French
H. E. Hiestand
R. N. Knowles
W. H. Darnell
S. B. Cupp
L. Percival, PP&R
A. A. Wright, TF
J. C. Bonnett, ER
R. D. Richardson, CW
R. E. Read, Jackson Lab
G. H. Patterson, Jackson Lab
G. L. Thayer, Jackson Lab
H. J. Trochimowicz, Haskell
P. W. Schneider, Haskell

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